THE VETERINARY RECORD

A Weekly Journal for the Profession.

Edited by WILLIAM HUNTING, F.R.C.V.S.

No. 806 DECEMBER 19, 1903. VOL. XVI

"THE COBBLER TO HIS LAST."

Amongst handicrafts, the facilities of transport, the developments of machinery, and the continuous "division of labour" have so altered the conditions that in many trades there is now but little "last" to "stick to." In the professions it is otherwise, and the old rule—which, in the main, is a good rule—that a man should "mind his own business," still obtains.

The solicitor is favoured by law to such an extent that any other person daring to practise his art is prosecuted. The doctor cannot prosecute a quack for practising medicine unless the false pretence of being a medical practitioner is added to the offender's doings. But no class looks with greater contempt upon the interference of outsiders than the medical man.

In emergencies it is simply the duty of every man to use his knowledge and skill for the common good, and a case in point occurred in the Nandi Expedition a year or two ago, when the P.V.O., in the words of the despatch, "placed his surgical skill at my disposal . . . when no medical officer was available." But under ordinary conditions, what a doctor would think or say if he heard of a veterinary surgeon performing a surgical operation on the human being, or attending a case of measles can only be imagined. His language would certainly be "free" and contemptuous. We acknowledge he would be right. We hold that a veterinary surgeon, possessing a first class knowledge of medicine and surgery, should only apply it to the lower animals. He should mind his own business. The fact that the organs and tissues of all animals are very much alike, that medical and surgical skill are possessed by veterinarians, is no excuse for trespassing on the domain of the human surgeon. If it is clear that veterinarians have no right to interfere with the practice of doctors, it is surely as clear that the doctor has no excuse for trespassing in the practice of veterinary medicine and surgery. It is curious how often the doctor fails to recognise this; and the *naiveté* with which he is pleased occasionally to relate how he has attended a canine patient or surgically interfered with a suffering horse or cow, would be amusing if it were not annoying. It is not as though he were obliging with an amateur performance. When he does not accept a fee he fancies he has established a great obligation upon the owner.

We veterinarians resent all this, and we look upon it as an unjustifiable intrusion. Quite recently we heard of a doctor accepting an invitation from a local authority to investigate an outbreak of anthrax, over the head of the veterinary inspector. Whether the Authority is now aware of the utter incapacity, if not imbecility of the doctor we do not know, but we hope soon to adduce evidence of the loss and expense caused by this man's ignorance.

MILK FEVER.

Isn't it about time we contrived a name for this disease somewhat more in accord with the conditions which are present than those in use amongst us so far.

We are, I think, fairly well agreed that, at any rate in uncomplicated cases, no fever is present.

The use of the term Parturient apoplexy is equally, if not more unsuitable, for there is no apoplexy, and it is only by a kind of accident that it is associated with parturition. "Parturient fever" is still more unsuitable. "Dropping after calving" is misleading, because another condition, totally different, produces in some districts the inability to rise, as in milk fever, but without most of the other symptoms associated with it.

I remember that forty years ago my father insisted that the sole cause of milk fever was the presence in the blood of the richer elements, fat cells mostly I presume, which exist in good milking cows at the time of calving, and following up that theory he adopted a system of preparation which had for its object the reducing of the quality of the blood just at the time of calving.

He had some very bad subjects to deal with—cows which would make from ten to thirteen pounds of butter a week, and keep this up for some time, so the measures had to be pretty strong to succeed.

He found the most satisfactory results to follow bleeding the cow to the extent of a gallon to five quarts at from twenty-four to forty-eight hours before actual calving. In some cases this is rather difficult, but I have followed the same practice with equally satisfactory results.

I remember one herd which previously lost annually 25% from milk fever, afterwards was free unless the bleeding was omitted.

I find now that it is sufficient in most cases to put the cow on a diet of hay, which in this district means meadow hay only, not clover or other grasses, totally prohibiting exercise or any other food for fourteen days before calving, produces satisfactory results, while the giving of even a small amount of grass, or roots, or other food which may contain anything likely itself to produce richer milk, or to stimulate the stomach to extract more nourishment from the hay, will be sufficient to bring on an attack of the disorder.

I have said that the connection of this disorder with parturition is somewhat of an accident. Going some way to prove this is the history of a case which occurred in my practice some five or six years ago.

One morning in the middle of June I was called early to a cow which was down. I found her suf-

ferring from a typical attack of "milk fever." She was quite well when turned out the evening previously. The night had been very trying—sleet and rain and a cold wind, and this no doubt had brought on the attack. She passed through all the stages of paralysis and loss of sensibility; the secretion of milk was entirely suspended. She got up about 24 hours after I saw her.

She had calved in the previous January. It was certainly the most unusual case I have met with, bnt went a long way to prove to me that if from any cause the extraction of the fat cells be suspended, always supposing they are present in sufficient quantity, it will result in the same effect being produced whether calving has taken place recently or not. The cow in question was a most excellent milker, the best in a very good herd of twenty or more kept entirely for dairy purposes.

Taking all the circumstances into consideration, I think we are bound to believe that in some way the milk, or some of its constituents, are responsible for the disorder, therefore one part of its name is rightly styled "milk."

The next point is what we shall call the diseased condition, and although it may be difficult to explain scientifically, still in the acknowledged absence of other characteristic conditions of disease, and remembering the very striking analogy which exists between the symptoms of milk fever and alcoholic intoxication, also bearing in mind the evanescent character of "milk fever" in successful recoveries, I think we are justified in regarding this also as an intoxication. I therefore suggest calling it "Lacteal intoxication."

Now for the treatment of the disease.

I find that during the present year I have been called to 31 cases. Of these 28 have recovered in from 12 to 60 hours, most of them were on their feet within from 6 to 24 hours. Of the rest, one was down four days and, I believe ultimately got up, but am not quite sure, as she was an aged cow, a long way off, and the owner promised to let me know if she did not go on well; as I have not heard to the contrary I quite expect she did well eventually. One of the others died from septic metritis in 24 hours. The third died from "milk fever" 4 or 5 hours after being seen.

The result therefore of the treatment must be regarded as quite satisfactory on the whole.

Only one death from uncomplicated milk fever out of 31 is very far better than anything I have ever known under any other form of treatment.

I follow Schmidt's system, but use only 16 oz. of fluid divided between the four quarters of the udder. Lay the cow well over on her side and thoroughly strip out all the milk. Pump in plenty of air, until it escapes from the teat, when the syphon is withdrawn. Distribute the air and fluid well through the gland by kneading and shaking. Cover the cow up warm with woollen rugs or hay, and give internal medicines to suit the symptoms—aperients are useless, if not absolutely injurious—chloral or pot. brom. if excited or likely to try to get up too soon, before the intoxication has passed off: stimulants if coma is present—especially if the patient gets cold. Ammonia I find best.

Your correspondent "Lincs." is no doubt handicapped by having exceptionally heavy milking cows to treat, but I would suggest that he might profitably reduce the quantity of fluid injected into the udder, and give only such internal medicines as will correct the apparent disease symptoms. I suppose that not more than one-half of the cows I have to treat are of that dangerous type—our county breed are quite innocent of any risk from excessively rich milk—but we have some good dairy cows here of all the breeds liable, and hence my experience is likely to be of value even to "Lincs" Our land has some of the best beef and butter making qualities in the country.

Hereford. STEPHEN BEESON.

MILK FEVER.

If one might be permitted to judge from the recent correspondence appearing in *The Veterinary Record* the Schmidt treatment for milk fever seems to be anything but a universal success.

Comparing the recorded experience of those observers with my own. one is forced at first-sight to suspect that the success or failure of this treatment is simply a question of locality—a somewhat doubtful conclusion, for does milk fever present itself in such benign and malignant forms that in one district the per. entage of recoveries is excellent, while in another they are practically *nil?* or can it be a question of the idiosyncrasies of the patient brought about through processes of environment, the primary issue of climatic and dietetic conditions. There must be a large number of veterinary surgeons who have had extensive experience with the Schmidt treatment, and if a record of results could be obtained, it would make not only interesting but profitable reading.

From the first announcement of the treatment up to the present we have treated something like 130 cases of typical milk fever, some taken in the early stages, some *in extremis*, and our results have been 100% of recoveries from milk fever, 9% have died from complications, *i.e.*, pneumonia, fractures, septic mammitis and tuberculosis, and it is rather interesting to note that in each and all of these cases expert aid was not sought for at the outset. Probably 10 to 15% of the cases lost one or two quarters at the most. So highly satistactory has the treatment been in our hands that we now look upon it as infallible, and we might add that after the first injection the comatose and apparently almost lifeless carcase shows visible and unmistakable signs of animation that the most casual observer is struck with surprise. In a number of cases we have had return of consciousness followed by a relapse which a second, or maybe a third injection rectified, and in three or four cases, not only has the coma disappeared, but the paresis has left the patient and she has regained her feet, stood from five to fifteen hours, and then gone down comatose, and eventually made a good recovery. One case in particular, after getting on to her feet, walked home from the field 1½ miles, stood and appeared to do well for fifteen hours and then went down, became comatose, in which condition she remained for more than twelve hours, eventually recovering.

Quite recently we were called to see another case of more than ordinary interest. The subject was aged shorthorn cow which last year had suffered from an attack of milk fever. This time the owner had treated her for 40 hours, giving her patent mixtures, the odour of which suggested the pungent aroma of chloral hydrate. The patient was lying in a half propped-up position with the head sometimes stretched on the ground, sometimes tossed in the air, and sometimes resting in the characteristic position, the muzzle against the chest. Consciousness was only slightly visible, the owner assuring us that she had remained in that condition since first taken. In four hours after the injection she regained consciousness; in nine hours she ate a bran mash; 24 hours later she regained her feet, ate hay and chewed her cud; 10 hours later she developed pneumonia, and was killed the same day.

Bridgwater. W. M. Scott, F.R.C.V.S.

ABSTRACTS FROM FOREIGN JOURNALS.

Tuberculosis in the Cat.

Lellman notes two cases in cats. Clinical examination showed marked wasting, severe anæmia, pulse 130 per minute, respiration 30. Cardiac murmur, ascites, leucocytosis, examination of the dropsical fluid confirmed the existence of acute miliary tuberculosis. Post-mortem revealed a litre of thick serous fluid in the abdominal cavity. Enlarged mediastinal, bronchial and mesenteric glands, and miliary nodules full of tubercle bacilli in the liver, spleen and lungs.

The second case was similar, with the addition of miliary nodules in the omentum and pleura and a lymphatic gland as big as a hen's egg.—*Berl. Thier. Woch.*

Tuberculosis in the Horse.

In 1902 Steinnow had a horse under treatment for what he diagnosed as laryngo-pharyngitis, but a roaring noise similar to the grunt of a pig rendered the diagnosis somewhat doubtful.

Hygiene and therapeutic treatment gave no improvement, in spite of a fair appetite the animal continued to lose flesh, and at the end of three months was quite emaciated, and a hard mass was apparent in the left side of the throat, which yielded a little to mercurial ointment and the internal administration of iodide of potassium. A month's treatment seemed to have effected a cure, but in a few weeks it had relapsed into its former emaciated condition.

The swelling was extirpated and proved to be tubercular, but with the sole exception of a slight betterment in the roaring no improvement occurred, so the beast was killed.

Autopsy revealed catarrhal lesions of the pharynx attributable to regurgitation. Tuberculosis of the retro-pharyngeal glands, cæcum, spleen, and peritoneum; the other organs including the lungs were healthy.—*Annales de Méd. Vét.*

F.E.P.

ON THE ETIOLOGY AND SOME OF THE PHASES OF CANINE DISTEMPER.*

By Henry Gray, M.R.C.V.S.

This disease in the light of modern research has been shown to be of bacterial origin and communicable by either contact with animals already suffering from the infection, or living in surroundings where sick dogs have been recently, or by inoculation, or from natural infection, which is produced without any anterior contagion. The *contagium* appears to be fixed, and not conveyed aerially.

Ever since 1875 when Professor Semmer made known his conclusions, many investigators, until quite recently, have fruitlessly endeavoured to solve the problem of the primary cause of this malady. It was not until Professor Lignières, a former assistant of the late Professor Nocard, published his researches on this and similar diseases affecting other animals that the exact cause of it attracted much attention. His and Dr. Phisalix' investigations show that the microbe of distemper, the *Pasteurella canis*, simulates in general characters those contained in a large group of micro-organisms of the fowl-cholera type, termed originally by Trévisan, *Pasteurella*, a group revised by Lignières who still retains the same appellation. I may add that many of the diseases included in this group were formerly included in Hueppe's group of *Hæmorrhagic septicæmias* introduced by him in 1886 after studying swine-plague, Koch's rabbit-septicæmia, wild-animal and cattle-disease, fowl-cholera, etc. (1)

In this group of diseases, termed *Pasteurelloses* by Lignières, are included fow-cholera, swine-plague, pneumo-enteritis, etc., of cattle, sheep, goats, and buffalo, equine influenza, guinea-pig distemper, two septicæmias of the rabbit, canine and feline distemper, and typhus, etc.

The specific characteristics of the Pasteurella are invariably the following: Cocco-bacilli without movements of translation and not coloured by the method of Gram, very polymorphous, exhibiting involution forms, not liquefying gelatine, not coagulating milk, the reaction of which is normal, giving no visible culture on natural acid potato, nor indol in pancreatic bouillon, not redding the gelose of Würtz, chiefly ærobic, but also anærobic, giving off a characteristic odour from cultures. No spores, no cilia. Virulence very variable, but generally great. By intravenous injection, special affinity for the articular and tendinous synoviæ.

These characters are fixed and absolute, and if any of them be absent the microbe is excluded from the group of *Pasteurella*. As a general indication it may be added that these microbes are easily coloured at both extremities, leaving a clear centre; that they are not so easily coloured as some other microbes, for instance, the Bacillus coli communis; that they sometimes grow discretely on the usual culture media; that, finally, in certain cases, they are very difficult to detect in the organism. (2)

There is another character common to all the Pasteurella, and that is that they render turbid the alkaline peptonised bouillon culture.

Dr. Phisalix has constantly found that the microbe isolated from the dog and passed through this animal only, renders the bouillon turbid, like that of the

* Read before Central Veterinary Medical Society at Red Lion Square, London, W.C., Dec. 3rd., 1903.

(1) Hueppe.—*Berliner klin. Wochenschrift*, pp. 755 and 794, vol. xxiii., 1886.

(2) *Recueil de Médecine Vétérinaire*, 30 Juin, 1900, pp. 331, 332.

other Pasteurella. Professor Lignières makes an exception of this character for the *Pasteurella canis.* (1)

The Pasteurella canis is found in the blood of the heart and of the organs under the form of very long bacilli, not resembling the normal type ; but after the first passage through the guinea-pig its aspect commences to change and is soon shown under the characteristic cocco-bacillary form. (2) It is difficult to detect within the organs after the first week or ten days. It seems to yield to the secondary parasitic invasions. It it very rarely found in the lungs, but another—*cocco-bacillus fœtidus ozenæ* of Pérez—is found instead in almost a pure state of culture. This latter parasite, said to be the cause of ozena in man, is found as a normal inhabitant of the healthy dog's nostrils and mouth. (3) Dr. Phisalix has found in the air passages of lungs of distempered dogs a vast number of microbes, notably a motile bacillus. B. coli communis is very often found in the mucus of the air passages during distemper.

It is very probable that the various forms of pneumonia associated with distemper are far from being specific, and are due to microbes varying according to the medium in which the disease occurs. Phisalix has on several occasions found the specific microbe in the form of unusually long filamentary mycelia having very long articles separated by a clear interspace, bending easily in all ways upon themselves. After a few cultures these long filaments gradually diminish, and at the end of five or six re-inseminations the short forms predominate. Not only do they possess all the cultural and colouration characters of the typical Pasteurella, but have their virulent properties. He has found them in the lung and pleural fluid along with a very virulent streptococcus. One passage through the dog returns them to their usual form. (4)

The late Sir Everett Millais, Bart., in 1889, commenced to study the etiology of distemper and isolated two bacilli, named A-bacillus and B-bacillus respectively, and a micro-coccus. All three liquefy gelatine. He did not consider A-bacillus had anything to do with distemper, at least he was unable to find what it did in connection with the disease. In conclusion of his work he says B-bacillus is the primary cause of the disease, and the micro-coccus of the complication, namely, pneumonia. (5)

Dr. Monckton Copeman, F.R.S. claims to have discovered a microbe 12 years ago when working on this subject with the late Sir Everett Millais, Bart. He says, "I find that the specific micro-organism is a small cocco-bacillus, which stains with the ordinary aniline dyes, but is decolourised by the method of Gram," and further on adds, "If gelatine be inoculated, growth occurs slowly at the temperature of the room, and, after a time, the medium tends to become liquefied." He also states that "in cover-glass preparations from broth cultures the bacilli are not infrequently found united to form chains, sometimes of considerable length," and again, "On potato it develops with difficulty, but now and again, after some days incubation, a moist-looking streak of a buff colour may be observed." It appears from his remarks that he isolated the specific bacillus by making agar plate cultivations from the exudation from the lungs, from the tracheal mucus, or from the nasal secretion ; from the first two situations often in almost pure culture. He has never succeeded in obtaining cultures either from the blood obtained from the heart with aseptic precautions, or from the liver, the gall-bladder, the kidney, or the spleen. His examination was made on animals that had died from the disease. (1)

This statement of Copeman differs almost if not absolutely from that of Lignières and also of Phisalix. These latter bacteriologists say their microbe, in acute cases of distemper, is found in the blood of the heart and of the organs ; that they have not been able to isolate it from the nasal, tracheal, or pulmonary mucus ; that it does not liquefy gelatine, and does not form any visible culture on potato ; and, that it is very small and does not form chains. On the other hand, and I can confirm it from actual observation, their microbe reproduces all the clinical forms of distemper known to veterinary surgeons. Lignières states the microbe found in the lung lesions is a saprophyte living commonly in the nostrils of the healthy dog.

Has Dr. Copeman mistaken the secondary infective agent for the primary ? Lignières and Pérez' account of this saprophytic cocco-bacillus (2) corresponds almost with Dr. Copeman's description of his so-called micro-organism of distemper.

Experimental infection with the specific microbe of distemper produces the disease in the dog and cat, which have afterwards naturally conveyed it to other animals of the same species placed in contact with them or put in surroundings contaminated by the artificially infected animals. Lignières has also reproduced it experimentally in the rabbit, guinea-pig, and mouse, and still also, after its virulence has been increased by a certain number (20-30) of passages through the guinea-pig, in the pig, sheep, ox, horse, ass, fowl, duck and pigeon

Again, Lignières, Phisalix, and others have with this microbe determined the various clinical manifestations of distemper such as meningo-encephalitis, chorea paralysis, vesicular pustules, opalescent and ulcerous keratitis, gastro-enteritis, lung complications, arthritis and catarrhal symptoms; and at will, according to the dose, the acute, subacute or chronic disease, the last after about three or four weeks' incubation.

According to Phisalix, the *Pasteurella canis* forms a soluble poison in artificial cultures which, when injected into susceptible dogs, acts principally on the nervous system and gives rise to disturbance of nutrition, and in consequence diminishes the resistance of the organism and thereby prepares the soil for secondary infections. By inoculating this toxin the majority of the manifestations of distemper can be produced experimentally.

Although the specific microbe is the primary cause of distemper there are other conditions, such as susceptibility and accessory or predisposing causes, necessary for the development of the infective agent. The susceptibility is greatest during youth, especially at the weaning and teething periods, and also at the commencement of the sexual stage of life ; but no age is exempt until after immunity has been acquired naturally or artificially. The accessory or predisposing causes are very important and have a great influence according to their degree and kind in determining this or that manifestation. Cold, wet weather, especially during the autumn or early spring, and exposure to draughts during this weather, have a decided effect in producing pneumonic lesions. Change of climate, or change of surroundings, change of food, or food of insufficient quality or quantity, insanitary dwellings, overcrowding, a long railway journey, washing a dog and not properly drying it afterwards, worms, sexual excitement, over-fatigue, purgatives, emetics, etc., all depress the organism and render it an easy soil for the development of the disease. Dogs that are well fed, kept in warm, dry, and scrupulously clean

(1) *Vide* Memoir on the Hæmorrhagic Septicæmias, p. 59.
(2) *Recueil de Médecine Vétérinaire*, 30 Juillet, 1900.
(3) *Annales de l'Institut Pasteur*, Dec. 25, 1899, Mai 25, 1901.
(4) *Comptes rendus des séances de la Société de Biologie, Séance, du 7 Juin*, 1902.
(5) *Veterinary Journal*, May, 1890, and May, 1891.

(1) *The Veterinary Record*, pp. 313-4, Nov. 16th, 1901, vol. xiv., 1901.2 ; and Proceedings of the Royal Society, vol. 67.

(2) *Annales de l'Institut Pasteur*, Decembre 1899, et Mai 1901.

dwellings and not subjected to great changes resist the disease, although exposed to infection, much longer than those kept under opposite conditions.

The period of incubation varies according to the quality and quantity of the infective material, the susceptibility and the accessory or contributory causes. A relatively large dose of virulent virus acting on a very susceptible animal, especially when exposed to changes of temperature and bad surroundings, determines the disease within a much shorter time than the same dose of a milder virus would on an animal equally susceptible placed in favourable hygienic surroundings. A small dose of mild virus on a very resistant animal exposed to inclement weather or given insufficient food would very likely produce a chronic form of distemper lasting three weeks or longer, after an incubation period of three or four weeks or more. To a very resistant but not immune animal a mild infection would not procure very many, if any symptoms beyond a few eruptions, which would very likely pass unperceived, unless the animal was subjected to some adverse influence causing other symptoms to appear. The period of incubation of such a case as this would probably be as long as five or six weeks. According to observation, both in practice and after experiment, the period of incubation varies from a few days (or after intravenous injection, even a few hours) to a fortnight, month or even longer. The period of incubation, at least for the primary infection, may be even indeterminable. There is one thing certain, complications or their sequelæ may appear one, two, or three months after the animal has been removed from the source of infection. From this fact, it may be gathered that the primary infection has, as Professor Lignières positively asserts, frequently an effaced *rôle*, verifiable by experiment and observation.

It has been stated by Pérez, Lignières, Bisanti and others that apparently healthy dogs may harbour the *Pasteurella canis*. It seems that a dog may have the infection clinging to his system for weeks and yet not suffer. This phenomenon agrees with that observed, microbiologically and clinically, in various diseases affecting various species, for example: diphtheria, typhoid fever, tuberculosis, glanders, contagious pleuropneumonia of oxen, influenza of the stallion, the fowl-cholera of ostriches and of foreign birds on board ship, malaria, trypanosomiasis, strangles, anthrax, black-quarter, swine-erysipelas, etc. And the latent infection probably accounts for the so-called "spontaneous" outbreaks of disease. Indeed, observation seems to lead one to believe that the specific Pasteurella may thrive as a saprophyte, that is, it may live within the animal or in the soil in a natural state, and that it may become virulent at a given moment, especially when a large number of animals are congregated together.

This latent infection or prolonged period of incubation is important when one has to explain accidents or manifestation of disease after vaccination. However, it is not the only important point in the consideration of this disease. Close observation is frequently required to detect the earlier or perhaps only symptoms which are, as I stated at the National Veterinary Association 1902, so often overlooked, or when observed badly understood, not only by dog-owners but also by veterinary practitioners, even including those who have a lot to do with dogs.

On the clinical thermometer some pin their faith, to tell them if distemper is present or not or whether a catarrhal discharge, etc., is distemper or not. I would suggest to young practitioners, or even to some of the older ones, not to trust to this "broken reed."

If the thermometer indicates an elevation of temperature, I will allow it is positive evidence that something is amiss; but if it indicates the normal, it is not positive evidence the animal is all right. This fact I have stated several times elsewhere, including the National Veterinary Association's meeting, 1902.

The disease may run its course and end in death without the thermometer being influenced one way or the other. Still after the injection of a relatively large dose of the strong virus, or at the commencement of the reaction of the complication, it may be of some use. Frequently the first notice of distemper given by the animal is convulsions or diarrhœa, which may pass off for a week or ten days before the usual symptoms by which we know the disease appear. At other times it is ushered in with gastric symptoms.

Eruptive Symptoms.

The commonest phenomenon encountered in the earliest stage in young dogs is the vesiculo-pustular eruption (1) which is generally preceded by slight dullness and diminished appetite, or occasionally by a convulsive attack. These eruptions vary in number from one, two, or more and are generally found on the under surface of abdomen, inside thighs, groin, or scrotum, if a male or vulva, if a female. When few in number they are generally discrete, but when numerous may become confluent. Occasionally they are scattered all over the body. They may develop and disappear within 24 hours to two, or three, or seven days.

Sometimes they disappear in one place to reappear in another. When they become distended with a clear amber-tinted fluid they burst, and leave an abrasion which may become incrusted with a scab, and when this scab disappears a small rounded or oval white cicatrix remains, and is very palpable in pigmented skins for sometime, and resembles the cicatrix left after chicken-pox in man. If the animal be subjected to a chill or other adverse influence at the time this eruption would likely appear, the eruption is suppressed, or if it have appeared it evanesces and is soon followed by the development of some complication, such as broncho-pneumonia, gastro-enteritis, meningitis, paralysis, chorea or catarrh. When the generalised eruption is treated as an ordinary skin complaint, pneumonia or some other complication followed by serious illness and often by death is produced.

At times, instead of the eruptions we find myriads of small bloody abscesses which resemble somewhat those of follicular scabies. At other times the skin has an appearance as if it had suffered from eczema. Rarely a true pustular eruption and resulting permanent cicatrices is observed. This primary eruption of distemper should be differentiated from the secondary and often recurrent eruptions, seen when the primary eruption has been suppressed and other complications have taken its place.

Frequently this primary eruption is the sole indication that distemper has taken place, and passes off without any other complication and leaves the animal immune. It can be induced experimentally by injecting a small dose of a slightly attenuated culture. The eruption itself may be produced by inoculating the clear fluid derived from an eruption of another dog, and after its disappearance may leave a ray-like areola of coppery scales as is frequently seen at the seat of inoculation of a dose of vaccine.

Catarrhal Symptoms.

Next to the cutaneous eruption, the catarrhal symptoms are of importance. At the National Veterinary Association 1902, I stated that dogs frequently had dis-

(1) Eric Viborg, of the Copenhagen Veterinary School, in 1795, and Blaine (Diseases of Dogs, 1817) were the first to note the occurrence of an eruption in distemper. Trasbot, Alfort Veterinary School, has taught for 36 years that distemper is an eruptive disease. Nocard and Leclainche view it as an eruptive disease.

temper without exhibiting any catarrhal symptoms whatever, and these cases were seductive and frequently fatal. When the catarrhal symptoms do develop they only do so after other symptoms, and are not the first symptoms of distemper. In many instances there may be a congestion of the conjunctiva and only a watery discharge from one or both eyes, which may pass off within a few days without running on to the mucous or muco-purulent stage. However, it may persist, and a week, or fortnight, or even three weeks, may elapse before the muco-purulent stage is arrived at. It is stated in text-books that injection of the conjunctiva, that is, a deep red condition of the conjunctiva is characteristic; but the dog frequently has a muco-purulent, or even a watery discharge from the eye without any injection. At other times the tears may have a scalding effect on the skin around the eyes, causing depilation. Sometimes the discharges from the eyes disappear to reappear at some future date.

The nasal catarrh usually runs in hand with the conjunctival catarrh. However, the former may be absent. In many instances the usual conjunctival and nasal catarrhal symptoms manifest themselves in regular order without any other complications.

Some years, an ulcerous or opalescent keratitis may be the only palpable manifestation in many cases of distemper, and if the animal is not exposed to an adverse influence the majority of cases recover. However, as you know, ulcerative or blue keratitis frequently complicates the other manifestations of distemper.

Enteric and Arthritic Symptoms.

In certain outbreaks during certain years the prevalent form of distemper is the catarrhal enteric form with few other symptoms beyond persistent diarrhœa, emaciation, and sometimes dysentery. In a few rare outbreaks, especially in big breeds, distemper is complicated by arthritis, generally mistaken for rheumatism, rickets or cramp. Every one of the animals in the kennel so suffers in consequence of bad sanitary conditions. Professor Lignières has produced this form experimentally, and I have several times observed it from the eruptive stage to the articular, and even with resulting fracture of the softened bones. This autumn I have seen many cases commence with rheumatic symptoms, or pain in one or more legs, especially the hind limbs, and a week or fortnight elapse before the usual symptoms of distemper appear.

Frequently young animals, when suffering from the chronic anæmic and wasting form, are treated for worms because, perhaps, one or two of the litter have diarrhœa and pass a worm or two with the stools, or vomit a few which have passed into the stomach in consequence of the duodenum—their normal habitat having become the seat of inflammation. Needless to say the drastic treatment adopted for worms in young dogs when in reality they are suffering from distemper, mostly kills the dogs, or at least sets up a severe catarrhal enteritis, although no worms were present or had been present in the majority of dogs treated ignorantly for worms. You can imagine from this fact why dog fanciers say that "worms" kills most of their pups, or that the pups are difficult to cure of worms. By such treatment thousands of pups, drugged by their owners, are destroyed every year in this country. Worms, according to my experience, are of very little importance compared with unrecognised distemper.

Nervous Symptoms.

Nervous phenomena may precede or run concurrently, or follow on other declared manifestations of distemper. Convulsions or paralysis may be the first warning that the animal is not well, the attack may pass off for a few days to a fortnight before any other symptoms declare themselves, and before the true nature of the complaint has been suspected. Blaine, as far back as 1817, noted this (1). However, I have seen similar phenomena occur about the same time or season without any symptoms of the complaint following on and without being able to connect them with distemper.

As to paraplegia, hemiplegia, and various kinds of monoplegia, chorea, a difficulty in avoiding obstacles, rotatory movements or going in a circle, occurring after the symptoms of distemper have disappeared, I believe it is an important point to know that any of these may manifest themselves as long as one to three months after distemper has apparently disappeared. I have also observed meningo-encephalitis, amaurosis, or pneumonia set in about the same periods after apparent recovery from the usual exhibition of the disease, or after coming from an infected place.

Congenital Phenomena.

One feature of distemper is very interesting and that is the effect of the complaint on the offspring of a bitch suffering from it during pregnancy.

At the National Veterinary Association, 1902, I mentioned abortion as a veritable epizoötic in catteries infected with distemper, and asked whether this had been observed in kennels? If I cannot answer this now, I believe I may truthfully say that pregnant bitches may give birth to dead pups if the dams have been in infected quarters during the latter period of pregnancy, although the bitches have not suffered themselves. On the other hand, if a bitch suffers from the disease during the latter term of pregnancy, or at the time of parturition, the pups are frequently born dead, or, if born alive, manifest the disease the first week or so after birth, and rarely survive. Yet, if a bitch suffers from the disease immediately before conception, or is in the convalescent stage at the time of conception, the resulting offspring, if born alive, and survive, is rendered immune, at least for a time.

Pneumonic Complications.

A very common phenomenon observed in this disease is the sudden development of pneumonia, which frequently kills off the majority of dogs attacked within a few days or a week. It seems to have no respect for breed, even mongrels when congregated together die rapidly, or after a few days or a week. On post-mortem examination there is an acute diffuse congestive pneumonia if the animals die early in the attack, or a diffuse croupous pneumonia if they survive a week or two. On the other hand, broncho-pneumonia oftener occurs during or after the other manifestations of distemper and usually runs a protracted course. The acute pneumonia seems contagious to those cases of distemper that would have run an ordinary course if not brought in contact with cases of acute pneumonia, leading one to believe that it is a special infection, unlike the broncho-pneumonic complications so frequent in this disease. This acute pneumonic form of the disease, if it is a form of distemper, produces its like and nothing else; and it would be interesting to learn whether it is contagious without the primary infection from the specific Pasteurella. A streptococcus that is coloured by Gram's method has been found in the lungs and pleural fluid of dogs dead of the acute pneumonia, and is very deadly. Occasionally it is associated with a submucous suppurative laryngitis or with suppurative foci in other parts, notably liver, submaxillary or retropharyngeal glands, etc. In the ordinary broncho-pneumonic lesions complicating distemper, pure cultures of the saprophytic cocco-bacillus of Pérez, the normal parasite found in the healthy dog's nostrils and mouth, are present; whereas in the acute and deadly pneumonia, streptococci are found (2) Albrecht, Blaine, Hertwig, Renault, Trasbot

(1) Blaine, Diseases of the Dog, 1817.
(2) *The Veterinary Record*, p. 303, Nov. 16th, 1901.

and others have encountered outbreaks of epizoötic pneumonia without the usual symptoms of distemper being present.

Frequently broncho-pneumonic lesions and even diffuse grey hepatization of the lungs are present without the animal manifesting a cough or disturbance of the respiratory rhythm leading one to suspect lung trouble. The animal frequently dies during a convulsive attack and on post-mortem examination one is surprised to find lung lesions.

I have very often encountered old dogs that have had a previous attack of distemper develope a cough from laryngitis or laryngo-tracheitis, or even bronchitis, when in contact with cases of distemper. It is no uncommon thing to find several dogs in a house some with only a cough and the others with characteristic distemper. This has led me to conclude that old dogs may and do have distemper in an abortive form, even when they have recovered from a previous attack. Again, I have on many occasions met with dogs suffering from a second and even third attack of the usual manifestation of the disease.

"Typhus."

During the last four or five years another form of the disease has been prevalent, to which various names, such as "New Dog Disease," Stuttgart Distemper, Contagious Gastro-enteritis, Hæmorrhagic Gastro-enteritis, Typhus, etc., have been given. (1) It appears, however, that it is nothing new, as many continental authorities, including Funke (1845), Duttenhofer (1847), and more especially Professor Hofer, of Munich, in 1850, have encountered and described it. Even it was not unknown to Blaine (2), who stated that distemper during some epizoötic years takes on the form of a malignant gangrenous typhus. This disease has been found to be due to the same Pasteurella as that causing distemper, by Professors Almy, Bîmes, Léclainche, Nocard, Sérès, Vallée, and others. The most characteristic features of it are that it is very fatal, and attacks by preference aged dogs; that there is nervo-muscular disturbance along with gastric and gastro-enteric lesions; and that frequently there is disease of the kidneys, and often necrotic lesions on the buccal and gingival tissues and sometimes on the point of the tongue. (3) However, young dogs frequently suffer from these phenomena in outbreaks of distemper, having some of the usual symptoms of this disease. Although it has been very often stated that old dogs suffering from this form of distemper do not manifest the characteristic catarrhal symptoms this should not be accepted as an absolute truth, as I have frequently seen catarrhal symptoms present even when the necrotic gingival and buccal lesions have spread to the maxillary bones, etc. On the other had, necrotic lesions, etc., may be present without gastric symptoms. Again, an animal may have gastric lesions without the usual symptoms, such as great thirst and repeated vomiting.

Occasionally dogs, especially young animals, after being exposed to infection die without showing much premonitory disturbance, and on making a post-mortem examination very few, if any, naked eye lesions are discernible. Such animals seem to be affected with acute intoxication and die before lesions have had time to form. At the commencement of an outbreak these cases are somewhat common, and liable to take one off one's guard as to the true nature of the cause of death.

(1) Bîmes and Sénès.—*Revue Vétérinaire*, Sept., Oct., Nov., Dec., 1901.

(2) Blaine.—Diseases of Dogs, 1817, and Canine Pathology, 1841.

(3) Youatt, in a paper on Distemper read before the Veterinary Medical Society, London, on Jan. 14th, 1830, mentions these lesions. *Veterinarian*, p. 80, 1830.

Frequently distemper seems to run a normal course of a month or six weeks, the eruption, complications, such as paralysis or paralytic chorea, catarrhal discharge, etc., disappearing, the animal regaining his appetite, condition, and appearing apparently well of distemper, when all at once the catarrhal discharge, cutaneous eruption, and other symptoms reappear and prolong the duration of the complaint for three to six months or longer.

According to observation of the experimental and natural disease, distemper should be divided into three divisions according to the course it runs, as follows:

(1) Acute or septicæmic distemper.
(2) Subacute distemper with complications.
(3) Chronic distemper with progressive emaciation, anæmia, etc.

Usually the forms of this disease have been classified according to symptoms or complications, and in consequence many of the manifestations of the malady have been excluded from it. The disease has been studied from its symptomatology and not from its etiology. If you induce the disease and closely watch its effects you will realise at once that many cases which you formerly mistook for so-called sporadic disease are in reality different or modified expressions of one primary cause—*the Pasteurella canis*. This modification is due on the one hand to several factors, such as susceptibility, cold, season, locality, climate, bad hygiene, etc.: and on the other to the virulence and dose of the virus or stimulus. Two other things ought not to be forgotten:—The first is, that the primary infection may have passed out of the body and still its effects have been left masked until some depressing or contributary cause has stimulated the latent into potency; the other is, that the disease has often an insidious invasion, and a lengthened period may elapse before the true nature of the complaint can be determined; especially is this the case when you have neither disturbance of temperature, nor catarrhal, nor cutaneous, nor pulmonary, nor abdominal symptoms, but only a capricious appetite, a gradual wasting, and, perhaps, a little dullness, from one to four or more weeks to guide you before some of the usual phenomena manifest themselves.

Bibliography.

William Taplin.—Practical Observations on Thorn Wounds, Punctured Tendons and Ligamentary Lameness in Horses, etc., and an Appendix on Distemper in Dogs (about 1790).

Delabere P. Blaine.—Diseases of Dogs, with Appendix on the Diseases of the Cat (1817), and also Canine Pathology, 4th edition, 1841.

William Youatt.—On the Dog, 1845; and paper on Distemper in the Dog, Veterinarian, 1830; and another on the Distemper of the Cat, Fowl, and Rabbit, *ibid*, 1832.

Mayhew.—On the Dog, 1854; and in Veterinarian, 1854.

Dr. C. H. Hertwig.—Krankheiten der Hunden, 1853; 2nd edition, 1880. French translation of 2nd edition, by Ad. Scheler (Brussels).

Camille Leblanc.—Nouv. Dict. Prat. de Méd. Vét. de Bouley; art. Chiens (Maladie des), Vol. 3, pp. 612, 630 1857 (Paris).

Zundel.—Dict. de Méd. Vét. de Hurtrel D'Arboval; art. Maladie des Chiens, vol. 2, 3rd edition, 1875.

Cadéac.—Enclycopédie de Pathologie Interne; art. Maladie des Chiens, vol. 6, 1897.

Mégnin.—Le Chien, 3rd edition, vol. 1 and 2, 1893-4.

Bîmes et Sérès.—Revue Vétérinaire, Sept., Dec., 1901.

Eric Viborg.—Veterinär. Skrifter, 3, Copenhagen, 1795.

Eric Viborg and Greve.—(Greve, Erfahrungen, und Beobachtungen über die Krankheiten der Hausthiere, Oldenburg, 1818.)

Williams.—Principles and Practice of Veterinary Medicine, 8th edition, 1897.

Trasbot.—Réc. de Méd. Vét., 1868 ; Arch. Vét., p. 161, 1879; Bull. Soc. Cent. Vét., pp. 306, 412, 443, 1885 ; and Réc. de Méd. Vét., 30th August, 1903. His annotations on Distemper in Drs. Friedberger and Fröhner's Pathologie et Thérapeutique Speciales des Animaux Domestiques, French edition, 1892.

Nocard and Léclainche.—Les Maladies Microbiennes des Animaux, 3rd edition, 1903.

Trasbot.—Dict. de Mét. Vét. de Bouley, art ; Pneumonie infectieuse du chien, vol. xviii., pp. 177, 181, 1890.

Renault.—Veterinarian, pp. 78, 83, 1844 ; ex. Recueil de Méd. Vét. et Prat., p. 1, 1835.

Ainslie.—Canine Distemper, Proceedings of Vet. Med. Assoc. pp. 49, 65, Jan. 16th and 23rd, 1838.

Dr. Georg Müller.—Diseases of the Dog, translated from the German, by Alexander Glass, 1897.

Friedberger and Fröhner.— Veterinary Pathology, vol. I, translated from the German by Capt. Hayes.

Hofer.—Der Abdominal-typhus der Hunde, Repertorium der Thierheilkunde, vol. xiii., p. 201, 1852.

Schantyr.—Untersuchungen über die Mikro-organismen der Hunderstaupe, Deutsche Zeitschrift für Thiermedicin, vol. xviii., p. 1, 1892.

Proceedings Nat. Vet. Assoc., 1902.

Phisalix.—Rec. Méd. Vét., July 30 and Aug. 30, 1903.

Lignières.—Ibid.

Rabieaux.—Recueil de Méd. Vét., July 30th, 1903.

Cadiot and Breton.—Médecine Canine, art: Bronchopneumonie contagieuse, 1901.

Gray : Penberthy : Taylor.—Epizoötic Gastritis or Canine Influenza, pp. 538-540 Vet. Record, Mar. 18, 1899.

ROYAL COUNTIES' VETERINARY MEDICAL ASSOCIATION.

A meeting was held on Friday, Nov. 27th, at 10 Red Lion Square, London, when there were present Mr. James East (President) in the chair, and Messrs. Percy J. Simpson, Maidenhead (hon. sec.); F. W. Wrrgg, W. G. Flanagan, J. C. Coleman, Geo. E. King, A. L. Butters, E. Lionel Stroud, and R. Porch, with Mr. C. W. W. Brown, visitor.

Apologies were received by letter and telegram from Major Meredith, A.V.D., Messrs. Jas. F. Simpson, A. Wheatley, J. S. Hurndall, S. Slocock, J. P. S. Walker, (hon. treasurer), E. C. Howard, Page Bull, Jagger, W. G. Flanagan, jun., Henry Lepper and T. W. Lepper.

Veterinary Surgeons and the Jury Lists.

The Hon. Sec. submitted a letter from Mr. McKenny, Dublin, hon. sec. of the V.M.A. of Ireland, enclosing a Press report of the decision in the Irish High Court for Crown cases reserved, on the appeal of Mr. C. Allen.

After some discussion the meeting unanimously passed the following resolution, proposed by Mr. Butters and seconded by Mr. King : "That this Association highly approves of the action of the Royal College of Veterinary Surgeons in trying to obtain exemption from serving on juries by members of the profession, and the hon. sec. was directed to forward a copy of the resolution to the secretary of the College and to Mr. McKenny.

Hæmoglobinuria.

The President reminded those present, before passing to the next business on the agenda, of a discussion they had last year in that room on a paper brought forward by Mr. James F. Simpson, of Maidenhead, on hæmoglobinuria, in which discussion Mr. Porch very ably joined. Mr. Porch said then that horses were affected in the fore-limbs by the disease, and he had that day been kind enough to bring a horse so affected for their inspection, which was waiting outside.

The members accordingly adjourned to the Square, where they saw the animal, and heard a statement of the case from Mr. Porch. On their return to the Council room—

Mr. G. E. King proposed a very hearty vote of thanks to Mr. Porch for bringing that very interesting case before their notice. It had been very instructive and would, he thought, be helpful to them in their future practice, as the appearance of the affection in the fore-knee was uncommon.

Mr. Wragg had much pleasure in seconding. He had seen a great many cases of wasting of the muscles in the hind limbs, but had never seen the fore-limbs so affected before.

Mr. Butters, supporting the vote, observed that the case was unique and very instructive, but its history as given by Mr. Porch was so clear as to leave no doubt.

The President, in putting the resolution, which was passed by acclamation, said it was the first time he had seen the fore-limbs so affected. He was pleased to say that in his district cases of the disease were few and far between.

Mr. Porch (who had to leave to keep an appointment) thanked the members for their resolution, and said he had diagnosed several similar cases of atrophy of the muscle, but this was a peculiar case in that the mare turned her toes in and showed loss of control of her limbs, so that she could not get well forward.

Accounts.

The Hon. Sec. read a statement of accounts from the Hon. Treasurer. It was of a satisfactory nature, and will, after audit, be submitted to the annual meeting.

Election of Officers.

The President, with reference to the Presidency of the Association for the coming year, said it gave him very great pleasure to propose Mr. E. Percival Owen, of Thame, for the office. They would all remember the thoroughly good service Mr. Owen rendered to the Association for several years as its Honorary Secretary, and taken all round he thought no man on the list of their members was more worthy of the honour than Mr. Owen (Hear, hear.)

Mr. W. G. Flanagan had much pleasure in seconding.

There being no other nomination, Mr. Owen was unanimously elected President for 1904.

Messrs. Jagger, of Bicester, H. G. Simpson, of Windsor, and W. Porch, of London, were chosen vice-Presidents for the ensuing year.

Mr. Wragg moved and Mr. King seconded the re-election of Mr. J. P. S. Walker, of Oxford, as Honorary Treasurer, commenting on Mr. Walker's long and valued services to the Association, and the resolution was carried by acclaim.

Mr. King said he had very much pleasure in proposing that their good friend Mr. Percy Simpson be again elected to the office of hon. secretary. They could not have a better man for the post, as Mr. Simpson threw an unbounded amount of energy and zeal into his work. Under his careful and courteous guidance the Society had been a great success, and he hoped Mr. Simpson would see his way to carry on the duties, not only for this, but for many years to come. (Applause.)

The President had very much pleasure in seconding Mr. King's proposition. Personally, he said, he had a great deal to thank Mr. Simpson for during his term of office, and he was sure it would be impossible for them to find a better secretary.

Hearty acclamation accompanied the unanimous passing of the motion.

Mr. PERCY SIMPSON thanked both the President and Mr. King for the very kind words they had used respecting him, and said he would do his very best for the Association, which he hoped would flourish even more in the future than it had done in the past (Applause.)

NEW MEMBERS.

Mr. R. H. Stephenson, of Chipping Norton; Mr. T. D. Hughes, of Woodstock, and Major Meredith, A.V.D., (1st Life Guards, Windsor) were then unanimously elected members of the Association.

The PRESIDENT read the following:—

REPORT OF DELEGATES TO CONGRESS OF SANITARY INSTITUTE AT BRADFORD, 6th to 11th JULY, 1903.

Gentlemen,—In presenting our Report we beg to state that the first Meeting as held in the Technical College. When the President, the Right Honourable Earl of Stamford gave the Inaugural Address, in which he directed attention chiefly to the general aspects and scope of Sanitation, its effects upon history, and its application by means of political and administrative methods.

His Lordship first dealt with the subjects of Modern Sanitation in its connection with the home, the School, and the factory and added some remarks on consumption and sewage as affecting our National and municipal life, concluding by saying that much good can be done by educating the children of this country in the principles of hygiene.

The Conference was naturally of a very wide scope, and dealt with the various questions of Sanitary Science, Preventive Medicine, Chemistry, Physics, Biology, etc. etc., you will consequently understand that with such an array of subjects it was impossible to attend every Section. Of course, the one your delegates took chief interest in was the Conference of Veterinary Inspectors.

The latter section was presided over by Mr. Charles Drabble, M.R.C.V.S. who gave a very practical address on the relations of veterinary matters to public hygiene.

A most interesting and practical paper was read by Mr. A. W. Holburn, M.R.C.V.S., on the slaughtering of animals for Human food, in which the various modes of slaughter were minutely described, and proved of great interest, Mr. Holburn maintaining that the Jewish method both from a humane, hygienic and economic point of view was one of the best methods of slaughter, but suggested that a national enquiry into the matter was necessary.

The second paper was read by Mr. J. W. Brittlebank, M.R.C.V.S., on "The Collection, Distribution and Contamination of Milk." This also proved a very interesting and useful essay, showing what a filthy condition the milk trade was in, and urging the local authorities to enforce the Dairy and Cowsheds Order—also proving that a much less danger exists from milk contamination if it be cooled as soon as possible after being drawn from the cow's udder. We need hardly say a good discussion followed, the members urging the necessity for national legislation on this important subject, affecting as it does not only the heatlh of animals but also that of human beings.

The third paper written by Mr. W. F. Shaw, F.R.C.V.S. on "The Disposal of Dead Animals" (in the absence of Mr. Shaw this paper was kindly read by Mr. Hunting.)

Mr. Shaw in his paper advocated that knackers' yards should be more strictly inspected, and that smaller animals such as dogs, cats, etc. should be disposed of by the different Councils providing a destructor, and thus do away with the sight of dead carcases lying in our streets or being buried in the back garden without being disembowelled. This paper also excited a considerable amount of discussion.

Your delegates cannot conclude this part of their report without observing that in their opinion the discussions would have been more interesting, comprehensive and profitable had copies of the papers read been supplied to the members earlier, so that they could have had time to peruse and digest them. This would also have allowed time for resolutions to have been framed and submitted to the meeting, and, if passed, to be subsequently presented to the General Meeting for confirmation. Your delegates regret that no resolutions followed the discussion.

Considering the importance of the subjects treated by the Essayist to the general public, and their value to those who are in positions of authority, it is to be regretted that the attendance was so meagre, not only of veterinary surgeons but also of the other members of Congress. Perhaps this was in some measure due to the fact that the place of meeting was so far from where the other sections were sitting. Of course the papers and the discussion will be printed and published and probably read, but this hardly compensates for a poor attendance. It is to be hoped that in future all the sections will be able to meet in one building.

During the Congress the customary entertainments and excursions to Public abattoirs, Sewage works and other places of interest were arranged, and your delegates attended as many of these as the limited time at their disposal permitted.

Some little time ago your delegates received a communication for the Corporation of Glasgow relative to these Congresses; from this it appears that their delegates have recommended that an appeal be sent to the Councils of the Sanitary Institute and the Royal Institute of Public Health to arrange in future to have a combined Congress instead of separate meetings as at present, and they further desire us to bring this matter before you for consideration.

Your delegates are strongly in favour of the proposed joint-congress, and recommend that this Association support the appeal of the Corporation of Glasgow to these bodies by passing and forwarding a resolution to that effect.

JAMES EAST.
A. L. BUTTERS.

On the motion of Mr. Wragg, seconded by Mr. Lionel Stroud, the President and Mr. Butters were thanked for their very able report, and the gentlemen named, in reply, touched on the value of such gatherings to the profession and to the cause of medical science in general.

Arising out of the above report, the following resolution, proposed by Mr. Butters, and seconded by the President, was unanimously passed, viz., "That this Association support the appeal of the Corporation of Glasgow to the Councils of the Sanitary Institute, and of the Royal Institute of Public Health, that in future they should try to arrange a combined Congress instead of having two separate meetings." The meeting instructed the hon. sec. to forward a copy of the resolution to the bodies interested.

THE VICTORIA VETERINARY BENEVOLENT FUND.

The PRESIDENT, Mr. Wragg, and Mr. Flanagan spoke of the good work done by this fund. Mr. Wragg pointing out that unless more subscriptions came in some of the pensions would have to be discontinued.

Mr. FLANAGAN gave notice that at the next annual meeting he would move that the Association subscribe ten guineas to the funds of the Victoria Veterinary Benevolent Fund, an amount voted by this Association last year, observing that the Society had no object in creating a big balance at the bank, so long as they could pay their way and meet any incidental expenses, and that any surplus funds could not be devoted to a better object.

Place of Next Meeting.

It was agreed, on the motion of the Hon. Sec., seconded by Mr. Butters, that the next—the annual—meeting be held at Reading as usual.

Interesting Parturition Case.

The President gave details of a very interesting case he had lately of a cow which was unable to be delivered, and was slaughtered after all his efforts for two hours had failed. It was a cow with about the fifth calf. On investigation a curiosity presented itself, which he had had photographed.

[The photograph, which was handed round and examined with much interest, showed a calf with an immense skull, the bones of which, Mr. East explained, were very thick and hard.]

Discussion on "Navel-Ill."

The meeting then proceeded to discuss the paper by Mr. G. E. King, at the Oxford meeting on June 26th, on "Oomphalo-thrombo-phlebitis" or, as Mr. King prefers to call it, "Umbilical Pyæmia, or Umbilical Infection. The paper (re-printed from *The Veterinary Record*) had been circulated among the members of the Association.

The President opened by saying that personally he had to thank Mr. King for bringing his important paper before the Association. In consequence of the small number of members present at the Oxford meeting it was deemed desirable, in the hope of a thorough discussion, to adjourn the matter for that purpose. They could all well understand the importance of the subject. That was a matter which Mr. King had gone very fully into, and with which his paper showed him to be well acquainted. There were a few questions which he (Mr. East) would like to put to Mr. King. One was whether in his experience it was more prevalent in some districts than in others? In his (the President's) own district he had farms where the mischief cropped up every season, though whether it arose, as Mr. King had told them, from insanitary conditions of the foal boxes, or whether the bacilli were more prevalent in such particular districts and gained entrance through the umbilicus, but was not sure. He had had cases where the umbilicus had been tied at the time of birth, and others in which it had not been tied, so that he could not attribute it to that particularly. The next question he would like to ask was if in Mr. King's experience it was more prone to occur in a horse foal than in a filly foal; his experience led him in the direction of the former, and it was an important matter to know. Another thing, as he understood Mr. King's paper, was that in his opinion the mischief of the swelling of the joints arose from septic arthritis; and he would like to ask him if such was the case, how he accounted for its metastatic condition, as one day they would find a knee affected, and another day a fetlock or other joint giving evidence of similar mischief. Then he had often found a milk-looking fluid, with an abominable odour, in the chest when he had been making examination into those cases. With reference to the treatment, he was quite at one with Mr. King, whose treatment was one of the best to be adopted. No doubt by the powder he used, and keeping the navel as dry as possible, there was much more likelihood of the patient getting on than if lotions were used. Of course the primary thing was prevention, and that was a matter they should all try their best for, to have the foal boxes thoroughly cleansed and disinfected, and attention paid to the navel at the time of birth and for a week or ten days after. It was, he was convinced, almost impossible to hope for benefit in a confirmed case of "navel-ill." As to calves, in his district the cases were very few and far between. He did not know why foals should be more prone to this mischief than other animals, but it certainly did not arise among calves, sheep, and pigs in the same proportion as it did among foals. With regard to the use of the hot iron in opening the urachus he quite agreed. (Applause.)

Mr. Percy J. Simpson said it would be a pity if Mr. King should go away without his able paper having been subjected to criticism; but he confessed that he was not able to criticise it, as he was pleased to say

they had very little "navel ill" in the Maidenhead district. He did, however, occasionally meet with such cases; and one rather curious case happened on a large breeding farm in their district, in which a horse which had never served a mare before served two mares—and two only—and both the foals had "navel ill." Was that a coincidence, or was it that the first mare was contaminated (this mare's previous foal had navel ill) and the stallion conveyed it to the other mare? They were the only two cases in the whole year on that large farm, and the fact had led him to think whether it was not true that the virus of the disease did lie dormant in the vagina. One of the mares in the case mentioned had, the year before, a foal die of a ruptured blood vessel very soon after it was born. It did not live long enough for "navel ill" to appear; but was it a question of the bacillus of "navel ill" having weakened the blood vessel which was ruptured? Mr. Simpson concluded by reading some very amusing passages from a quaint book, about 250 years old.

Mr. WRAGG, being called on, confessed that he had never seen a case in his life, adding, amid laughter, "we don't breed in London much—horses, I mean."

Mr. FLANAGAN observed that when he was in practice he got about ten cases in colts to one in calves; and he thought contamination in the foaling boxes might account for the disparity.

Mr. COLEMAN said Mr. King in his paper called attention to the microbe of that particular disease being confined to the cows *in utero*, causing abortion. He was wondering whether the great prevalence of abortion in his district was due to the same bacillus not developing, or showing itself in some other form. A great many of those cases came just before the colts were fit to be weaned; he had never had them in very young colts, but always between three and five months old.

Mr. BUTTERS knew very little about the disease, for the reason given by Mr. Wragg. He had seen in colts one or two cases where one joint was swollen one day and another joint the next, and he recollected one or two cases in which those swellings burst and discharged, becoming open sores, and the foals died. Mr. King ought to be congratulated on producing and bringing before them such a very able paper, and one which country practitioners and those in breeding districts would, he was sure, much appreciate. (Hear, hear.)

Mr. KING was received with applause on rising to reply on the discussion. He thanked those present for the very kind reception they had given to his remarks, and regretted very much that there were not more country practitioners present to give the paper the criticism which he invited. He was sure they would not only have criticised, but would have informed and instructed him quite as much as he had instructed them, for after all they learned more from the criticisms of practical men than from any amount of captious criticism. It had been his intention to re-write and embellish his paper, but shortly after the Oxford meeting he met with a very serious accident, which prevented him doing any head work for some months, and that was the reason of the delay in sending his notes to the press, which he hoped had not caused inconvenience. Mr. East, in his very courteous criticism, had asked him some pertinent questions. He asked whether the disease was more prevalent in some districts than in others. He (Mr. King) thought that was so, not merely that there was more breeding in some districts than in others, but they certainly saw it more on some farms than on others in the same district. He thought the explanation of that was that the owners and attendants were more particular on the less affected farms in cleansing the place and their hands, in taking away bedding that had been tainted by the previous parturition, and in all those little details which, as they knew, made for success in breeding. The next question was whether it was more prevalent in colts than in filly foals, and he said it certainly was so in his own experience. He thought the reason for that was that in the colt the urinary apparatus was so near the navel that it constantly became tainted with urine, and so acted as a focus for any germ life that might be "knocking about." As to the metastatic distribution of the poison, as the title of his paper pointed out, the disease was due to thrombosis in the animals affected. Portions of purulent thrombi became disintegrated, and were then distributed by the blood all over the system. In calves he had seen very little of the disease himself, although, as he said in the paper, he was located in a dairy district where many calves were bred. Of course they remembered the paper read by Prof. Mettam at the National meeting this year. As to whether Prof. Mettam made out his case or not he would not give an opinion; but he thought the umbilicus was probably the seat of infection in at least a good number of cases, and that it therefore behoved them to be very careful about that part. He thought the case of the two mares related by Mr. Simpson was in all probability purely a coincidence, and that both foals most likely became contaminated by some other infection. It did not appear to him logical to think that germs could be deposited in the vagina of a mare and remain latent for such a length of time as eleven months. Of course abortion was due to a different germ altogether, and then the mare hardly ever went the length of time. "Navel ill" was probably not due to a specific germ—it was not a disease they could liken in any way to glanders or anthrax. He believed that umbilical pyæmia, or whatever they might call it, was due to a mixed collection of germs, and that probably the saprophytic infection was as important as the parasitic. (Applause).

Mr. SIMPSON proposed a very hearty vote of thanks to Mr. King, first for the most able paper he had given them, and secondly for the way in which he had answered the questions asked him that day. His paper and remarks had given them all instruction. (Applause.)

Mr. BUTTERS, in seconding, joined with Mr. King in sincerely regretting that there were not more country practitioners with experience of the disease present. Mr. King must have devoted a considerable amount of time and care to the preparation of his paper, and the least they could do was to give him hearty thanks for it. (Applause.)

The PRESIDENT thoroughly endorsed every word that had been been said with reference to Mr. King's paper. Speaking personally, he was more than thankful to him for his kindness in coming forward, as it was most difficult to find gentlemen to read papers at their meetings. (Applause.)

The resolution was carried by acclamation, and briefly acknowledged by Mr. King.

Mr. LIONEL STROUD moved a vote of thanks to the President for presiding that afternoon, and also for bringing forward a very interesting case. (Applause.)

Mr. BUTTERS seconded, adding to the resolution thanks to Mr. East for the very admirable way in which he had conducted the business of the Association during the year.

Mr. SIMPSON supported, and took the opportunity of rendering his thanks to Mr. East for his most kind and considerate help to him in any little difficulty he had to surmount during the year in the secretarial work.

Mr. STROUD put the resolution to the meeting, and it was carried with cordial acclaim.

The PRESIDENT, responding, assured the meeting it had given him very great pleasure to preside over the deliberations of that important Association during the year, and expressed the hope that his successor might have as pleasant and easy a time as he had himself enjoyed.

VETERINARY MEDICAL ASSOCIATION OF IRELAND.

A general meeting was held at the Gresham Hotel, Dublin, on Thursday, November 26th, at 7.30 p.m. The following members were present: Messrs. C. Allen (President) in the chair, P. J. Howard, A. E. Mettam, W. Cargill Patrick, Captain J. T. Coley, W. H. Wilkinson, J. D. Richardson, H. Hannan, R. B. Freeman, G. Newsom, F. Kerr, J. Holland, W. H. Bradley, J. A. Jordan; W. P. Cushnahan, J. R. Wardrop, J. O'Brien, W. E. Elkins, L. P. Knight, R. Griffin, C. Jones, W. A. Young, S. Adamson, W. Chambers, M. Hedley, J. F. Craig, J. J. Kelly, J. H. Carr, L. M. Magee, J. McKenny, and W. Hunting (visitor).

The following members wrote expressing their inability to attend: Messrs. J. H. Pierse, J. C. Kyle, J. Preston, J. H. Norris, D. Hamilton, J. A. Thompson, A. Dobbyn, W. F. Mulcahy, E. Wallis Hoare, R. Malone, Capt. R. H. Holmes, T. L. Simcocks, T. McCauley, F. C. Mason, R. H. Lambert, J. D. Whitty, Captain W. D. Smith, A. M. Crighton, G. Jarratt, A. J. Macdonald, Prof. Wooldridge, W. W. Malone, T. H. Griffin, G. B. Miller, S. W. Haffield, T. J. Daly, R. D. Dove, G. Dunne, M. Murphy, E. C. Winter, J. V. Daley, J. F. Healy, Col. B. L. Glover, and J. J. Vahey.

New Members.

The following gentlemen were ballotted for and unanimously elected members of the Association: Messrs. S. R. Tufts, W. A. Potts, L. P. Power, A. J. Moffett, J. McArthur, A. O. McDowell, J. Moir, Prof. G. H. Wooldridge, Prof. J. F. Craig, J. Loughran, and W. Watson.

The following were nominated for election: Messrs. F. W. Taylor, B. P. J. Mahony, J. Purdy, and E. O'Reilly.

Election of Auditors.

Messrs. L. M. Magee and W. Russell were re-elected auditors of the Association for 1904.

Report of Council.

The Report of Council was then read by the Secretary, viz:—

"Gentlemen,—Your Council have had under their consideration the question of 'Specialists in the Veterinary Profession: Certificates for Honorary Associates; Agitating for the Creating of Appointments for Veterinarians similar to the duties performed by Dispensary Doctors; and the duties and salaries of Veterinary Inspectors under the Contagious Diseases (Animals) Acts.' However, these matters require careful and exhaustive consideration which, up to the present, has not been concluded, we therefore merely draw your attention to the fact that they are under our consideration."

The following resolution was received from the Irish Central Veterinary Association, viz:—

"That this Association appoint a Committee of three to confer with a similar committee appointed by the Veterinary Medical Association of Ireland, to take action in the interest of the Veterinary Inspectors under the Contagious Diseases (Animals) Acts; and that we hereby invite the Veterinary Medical Association of Ireland to appoint such a Committee."

It is proposed that Messrs. W. A. Byrne, W. Cargill-Patrick, and J. A. Thompson be appointed to confer with the three gentlemen appointed by the Irish Central Veterinary Association.

We selected the design of Messrs. Waller and Co., of Suffolk Street, for the seal for our Association; they have engraved the die, and we now submit an impression of it.

The Secretary submitted the replies from the various Veterinary Colleges and Associations in response to our circular letter of Sept. 9th, in reference to the exemption of veterinarians from attendance on juries, etc., and we now state that the said replies were highly satisfactory, but as some of the replies are very lengthy, we consider it sufficient to merely mention their names, viz.,

New Veterinary College, Edinburgh.
Royal Veterinary College, Camden Town.
Western Counties Veterinary Medical Association.
Ontario Veterinary Association.
South Durham and North Yorkshire V.M.A.

Itinerant Lecturers:

We consider it advisable to submit a précis of the correspondence leading up to the letter of the Department of Agriculture and Technical Instruction for Ireland, dated September 14th, with reference to Itinerant Lecturers, viz.,

1902. Dec. 1.—John Holland, M.R.C.V.S., Athy, to Hon. Sec. Veterinary Medical Association of Ireland.

Complains that Mr. Leaf—Instructor on Manures, &c., to Kilkenny County Council—is lecturing to farmers *re* treatment of Milk Fever, inoculating for Black-leg, &c., said Mr, Leaf not being a Member of the Royal College of Veterinary Surgeons; and asks that steps be taken in the matter if advisable.

Dec. 3.—Hon. Sec. V.M.A. to John Holland, M.R.C.V.S.

Acknowledging letter of Dec. 1st, and asking for further particulars on the subject.

Dec. 14.—J. Holland, M.R.C.V.S., to Hon. Sec. V.M.A.

Stating that Mr. Leaf has inoculated calves to prevent Black-leg, and that in consequence Societies are procuring syringes and materials, and that Mr. Leaf has injected Pot. Iodide into cows' udders.

Dec. 16.—Resolution of Council V.M.A.

Instructing Secretary to write to the Department of Agriculture enclosing extracts from Mr. J. Holland's letters, and to point out that such lectures delivered by a layman are opposed to the well-being of the veterinary profession.

1903. Jan. 15.—Hon. Sec. V.M.A. to Secretary Department Agriculture and Technical Instruction for Ireland.

Submitting for consideration extracts from Mr. Holland's letters, and points out that the action of the County Councils therein described is opposed to the well-being of the veterinary profession—in which the Department has taken so much interest.

Jan. 17.—Sec. Dept. Agric. to Hon. Sec. V.M.A.

Acknowledging receipt of letter of Jan. 15th, and stating that the subject matter will receive attention.

April —Extract from a pamphlet issued by Messrs. Parke, Davis & Co., of 111 Queen Victoria St., London.

Quoting extract from *The Anglo Celt*, Cavan, Jan. 24, in which Mr. A. Reeves, Agricultural Instructor for Co. Cavan, is said to have given an address in which he explained several systems for preventing disease in cattle, particularly Black-leg, and gave the name of Messrs. Parke, Davis and Co's preparations as a preventive.

April 29.—Resolution of Council V.M.A.

Placing on record the fact that the members of the V.M.A.I. agree that Mr. A. Reeves by his action, as described in Messrs. Parke, Davis and Co's pamphlet, is dangerously misleading the public by producing a false and mischievous impression that he is a Member of the Royal College of Veterinary Surgeons.

April 30.—Hon. Sec. V.M.A. to Sec. Dept. Agric.

Asking if any steps have been taken by the Department relative to the lectures delivered by Mr. Leaf in Co. Kilkenny, and submitting the resolution of April 29th bearing on the same subject.

May 6.—Sec. Dept. Agric. to Hon. Sec. V.M.A.

Acknowledging letter of April 30th, and stating that the subject will receive attention.

May 21.—Sec. Dept. Agric. to Hon. Sec. V.M.A.

Asking for fuller particulars regarding the information on veterinary subjects which Mr. Reeves is said to have given in his leetures on Agricufture in Co. Cavan.

June 23.—Resolution of Council V.M.A.

Instructing Secretary to write to Dept. Agric.

June 24.—Hon. Sec. V.M.A. to Dept. Agric.

Forwarding Messrs. Parke, Davis and Co's. pamphlet, and extracts from Professor Law's work on "Veterinary Medicine," in which it is shown that information such as was given by Mr. Reeves is calculated to cause loss to agriculturists as well as interferes with the legitimate right of veterinarians.

June 26.—W. Dawson, M.R.C.V.S., Cavan, to Hon. Sec. V.M.A.

Drawing attention to the fact that Mr. Reeves is acting virtually as a veterinary surgeon to the Cavan Co. Council, and is constantly inoculating calves as a preventive of black-leg; injecting uterus of cows after abortion; and instructing farmers regarding the treatment of milk fever; also seeing sick animals, and prescribing for same.

July 6.—Sec. Dept. Agric. to Hon. Sec. V.M.A.

Acknowledging previous correspondence, and thanking for particulars supplied, which he states is the first definite information received by the Department on the subject; states that the Department proposes to summon a meeting of County Instructors at the end of July, when the matter will be fully enquired into.

July 8.—Hon. Sec. V.M.A. to Sec. Dept. Agric.

Acknowledging letter of July 6th, and forwarding copy of complaint made by Mr. Dawson, in order that same may be made use of at conference of Agricultural Instructors at end of July.

July 10.—Sec. Dept. Agric. to Hon. Sec. V.M.A.

Acknowledging letter of July 8th, and stating that subject matter will receive attention.

Aug 18.—Resolution of Council V.M.A.

Instructing Secretary to communicate with the Dept. Agric. directing attention to letter of July 6th from Department, and the Association's further letter of July 8th, and to ask if the conference therein referred to has been held, and if so whether arrangements have been made by Department to prevent a recurrence of the objectionable practices referred to.

Sept. 3.—Hon. Sec. V.M.A. to Sec. Dept. Agric.

Enclosing a copy of resolution of August 18, and asking for the information therein requested.

Sept. 14.—Sec. Dept. Agric. to Hon. Sec. V.M.A.

Replying to letter of Sept. 3rd, and stating that conference of Itinerant Instructors has been held; that said instructors had been asked to refrain from giving public lectures and demonstrations on matters requiring the attention of veterinary surgeons; and pointing out that these Instructors are appointed by County Committees and not by the Department, and that any future complaints on the subject should be addressed to the County Committees.

Mr. Cargill Patrick, in referring to the preparations of Messrs. Parke, Davis & Co. and their supplying of Vaccine and Blacklegoids, said that when he got his own statement of account from the firm with the supply there was a discount of 15 per cent. marked off. The communication was addressed to Mr. Patrick, "Chemist." The following day he received another account *plus* the 15 per cent he had deducted, but he stated in reply that as veterinary surgeons were the right persons both to recommend and use the material it was not a proper thing to consider that they were not entitled to discount, and to assert that chemists were the only persons so entitled. However, as they had his cheque less 15 per cent the matter was allowed to drop, but the firm stated they would not allow the reduction in future. He was now bringing the matter before the Association and he had sent the correspondence to the Secretary, who, however, inadvertently omitted to bring it to the meeting. Still that was about the gist of the matter, and he would read another letter he had received.

(Read letter from A. J. McDonald, Kildorrery, Co. Cork.)

Mr. McKenny thought they should pass a resolution authorising him to write to Messrs. Parke, Davis & Co. insisting on a liberal discount—not 15 per cent., but, say 25 per cent. which is the usual figure in these matters. They were a very strong Association, and if the firm did not meet their demands, then they should get someone else to supply these Vaccines, etc. It was quite within their power to act in this matter and use their influence on behalf of the profession, and they should invite the co-operation of other Associations to strengthen their position.

Mr. Carr thought instead of writing a letter to the firm, they should come to an arrangement not to use Parke, Davis's preparation at all. They could get others just as good. If they sent a letter, in all probability the firm would, in the next issue of their pamphlet, describe themselves as "Boycotted by the Profession!"

Mr. Hedley said it was hardly the proper course to pursue. Instead of acting as their worthy secretary had suggested—supported by the hon. member for Kingstown—they might refer the matter to the Council, and let them go carefully into the whole question and consider it in all its bearings, before passing resolutions, writing letters, and so on. They could then report on the matter for the information of members, and recommend whatever was considered the most desirable course to follow.

Mr. Newsom had pleasure in seconding Mr. Hedley's proposal. He might say in doing so that a chemist in his district was advertising a preparation for black-leg which he described in his advertisement as "Recommended by the Department of Agriculture and by the local Agricultural Instructor.

Mr. McKenny thought a very sensible resolution had been now proposed, and he withdrew his. Mr. Hedley's proposal was carried.

The Seal of the Association.

Mr. Hedley submitted some impressions of the new seal of the Association, of which he described the details, and after considerable discussion it was approved.

Congratulations for the President.

Mr. Hedley said there was a certain event which had taken place since their last meeting which he would like to mention, and that was that their esteemed President had taken to himself a wife. This he thought was a very advisable thing for any gentleman to do, and they desired to congratulate him and wish him all the happiness that could possibly accrue from such a union. He trusted he would be long spared to enjoy the good will not only of their members but of every member of the profession (Applause).

Mr. McKenny seconded, and the resolution was passed with enthusiasm. Mr. Allen suitably acknowledging.

(To be continued.)

DISEASES OF ANIMALS ACTS 1894 TO 1903.

SUMMARY OF RETURNS, WEEK ENDING DECEMBER 12, 1903.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Swine Fever.	
	Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Dogs.	Other	Out-breaks.	Slaughtered *
Week ended December 12, 1903 ..	22	32	..	..	23	33	..	..	28	142
Corresponding week in 1902 ..	15	16	..	..	17	27	1	1	27	116
Corresponding week in 1901 ..	22	50	..	..	16	25	..	..	20	133
Corresponding week in 1900 ..	19	34	3	36	17	26	..	..	43	343
Total for 50 weeks, 1903	734	1092	..	..	1411	2409	..	..	1433	7744
Corresponding period in 1902 ..	653	1000	1	120	1118	1985	13	12	1633	7896
Corresponding period in 1901 ..	623	919	12	669	1304	2262	1	1	3086	14923
Corresponding period in 1900 ..	544	911	20	263	1083	1796	6	5	1868	17316

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection.
Board of Agriculture and Fisheries, Dec. 15th, 1903.

CANCER AND ITS ORIGIN.

The Bradshaw Lecture delivered before the Royal College of Surgeons of England on Dec. 9th, 1903.

By HENRY MORRIS, M.A., F.R.C.S., Eng.

[ABSTRACT].

Dr. Alexander Katz, of Hamburg, in a paper read before the Berlin Cancer Committee in January, 1902, grouped the alleged causes of cancer formation into the entogenous (or intrinsic) and the ectogenous (or extrinsic). By entogenous causes are understood certain spontaneous and anomalous changes within the organism ; by ectogenous causes those derived from outside the body. The entogenous embrace, amongst many others, the causes alleged under the two important theories of Thiersch and Cohnheim. Thiersch's theory and all the variants of it may appropriately be called the "lost balance theories" in contradistinction to the "matrix" or "tumour germ" theory of Cohnheim and his followers. According to Thiersch the beginning of a tumour formation is due to a loss of balance between the epithelial cells and the connective tissue. In carcinoma, for example, this loss of balance occurs during advancing age by the degeneration of the connective tissues and results in an invasion of these tissues by the epithelial cells. In other words, the theory supposes that in its origin carcinoma depends on some cause which produces as age advances a local impairment of resistance, a retrograde process in the sub-epithelial structures, whilst the epithelium maintains its activity or, it may be, acquires a special vigour.

Thiersch's theory and other "lost balance theories" are all open to the same objections which the "localists" brought against the "constitutional" theory. To hold that the formation of carcinoma is due to a loss of the normal balance between the epithelium and the connective tissue, the result of advancing age, is to imply the existence of an "all-pervading condition" of the connective tissues and yet that this "all-pervading condition" can give rise to a disease which at its outset at least is strictly localised. A disease so originating is not less of a constitutional disease than one due to a "special material in the blood," and such a theory of cancer is open to all the same arguments as the "blood theory." Indeed, Paget, after pointing out that there are not many things which do "all-pervade the body" fixed upon the all-pervading blood," rather than the all-pervading connective tissue," as the medium of the supposed "virus," merely, as he said, "because at any rate we can then hold to our study by some sort of analogy with things that we recognise as blood diseases." If the theory was correct cancer should commence, not as a solitary tumour, but as a general carcinomatosis or sarcomatosis.

I must pass now to a brief consideration of the ectogenous group of conjectural causes. These are : (1) the various forms of injury, chronic irritation, and chronic inflammation, etc. ; and (2) micro-organisms. Great importance has been attached by Virchow and many others to chronic irritation as a causative factor in cancer ; and it is certainly needful for us all to bear in mind the pernicious rôle played by the clay pipe, the carious tooth, and many and various agencies of the kind in provoking the development of cancer. But not one of them can take rank as the essential and unconditional cause of malignant disease ; that is, as the factor, without which cancerous diseases cannot arise, though they are unquestionably amongst the agents which excite the real factor of tumour formation into activity, and as such they must be referred to again in connection with the "tumour germ" theory.

THE MICROBIC THEORIES.

The theory of the microbic orgin of cancer still occupies the very forefront of cancer research. There are not wanting, however, indications that it is on the wane and that it may soon come to be described, as indeed Hansemann in his recent work has already spoken of it, as "belonging to history." The search for a specific micro-organism of cancer dates back to the early days of modern bacteriology. As soon as tuberculosis was removed from the list of diseases due to a so-called diathesis, by the discovery in 1882 of the bacillus tuberculosis, a very large number of scientific workers made it their aim to demonstrate, if possible, the existence of a corresponding micro-organism as the causative agent of carcinoma and sarcoma. Nedopil in a memoir published in 1883 was the first to sustain with conviction the microbic origin of cancer. No sign of a specific cancer organism had, however, at that time been demonstrated. But research soon led to the alleged discovery by different experimental workers of three classes of living agents—namely, bacteria, protozoa, and saccharomycetes and blastomycetes, or yeast fungi.

The bacterial or schizomycetic theory.—Bacteria were the first organisms which were thought to be the cause of cancer. Nepveu as far back as 1872 had found them

in carcinoma, and Rappin is said to have actually isolated a diplococcus both from epithelioma and sarcoma in 1886. During 1887 there appeared a number of writings by different investigators who claimed to have discovered—either in cancerous tumours, or in the blood of cancerous persons—the microbe of cancer, and to have isolated and cultivated it; and by means of inoculation of the fluid culture to have obtained the reproduction of the disease in animals. Sheuerlen claimed to have isolated and cultivated a special bacterium from carcinoma. Francke described a bacillus of sarcoma which he differentiated from the bacterium found by Scheuerlen in carcinoma. Schill stated that he had successfully cultivated a bacterium from both carcinoma and sarcoma. Others subsequently made similar claims; whilst, on the other hand, several eminent observers were arriving at the conclusion that many of the supposed micro-organisms were factitious products of faulty technique; and that such micro-organisms as had been actually discovered played but a very subordinate rôle, if any, in the evolution of malignant tumours.

The protozoic or psorospermic theory.—Before the year 1884 attention had scarcely at all been directed to the presence of sporozoa in human pathology, but between that date and 1891 coccidia—a group of parasites belonging to this class of protozoa—were found in a variety of the organs of man, especially in the pleura, the intestinal epithelium, the liver, and the ureter, as well as in the mucus from the air passages of persons suffering from whooping-cough. In 1889 and the following year a number of descriptions were given by several observers of coccidia-like bodies having a great resemblance to the coccidium of the liver of rabbits which they had discovered in carcinoma of the skin, jaw, intestine, stomach, nipple and breast, prostate and bladder, and other parts. These bodies were found both in the nucleus and protoplasm of cancer cells. In 1901 appeared Schueller's monograph with the description of the round or oval yellowish-grey or yellowish-brown protozoa of cancer, showing radiating striæ or cilia in their structure, which he had discovered. In 1891-92 Ruffer found and described bodies which he regarded as psorosperms in the protoplasm of carcinoma cells. In the same and the following years other workers described similar results. In 1901 Gaylord published an account of certain spherical bodies alleged by him to be cancer organisms, and von Leyden described a protozoal organism in the form of motile cells. In a work just published Dr. Ludwig Feinberg strongly argues for the animal nature of the cancer parasite, to which he gives the name "histosporidium carcinomatosum." On the other hand, many observers have asserted that all these alleged cancer organisms are not psorosperms but the products of cell degeneration, or cell inclusions of leucocytes or red blood discs, or are the result of irregular forms of indirect division of epithelial cells; and Ribbert brought forward, amongst other objections, his ingenious and telling argument of "symbiosis," against the validity of the microbic origin of cancer.

The blastomycetic theory.—The theory that carcinoma is due to infection by a vegetable parasite belonging to the blastomycetes or yeast fungi was first promulgated by W. Russell in 1890. Russell found certain small round bodies within the cells of carcinoma, which retained the fuchsin stain after sections of carcinomatous tumours had been treated with carbol fuchsin, then decolourised with alcohol, and finally counter-stained with iodine green. These "fuchsin bodies" he regarded as yeast-like or "sprouting fungi." Prior to Russell's paper the yeasts had been considered as wanting in any pathogenic effect, but within a few years after, cases of yeast infection in man resulting in the formation of granulomata, but not of malignant new growths, came to be recorded. The blastomycetic theory of the origin of cancer has been since pursued chiefly by Sanfelice and Roncali who not only confirmed Russell's views but have gone much further. Plimmer who was previously a strong supporter of the protozoic theory and had, like Soudakewitch, Metchnikoff, Ruffer, and others, described the cancer bodies as protozoa, became a convert to the views of Russell, Sanfelice, and Roncali, whilst Sawtschenko, who was also converted, has recently described as representing yeasts the same figures which he had formerly described as representing protozoa.

As in the case of bacteria and psorosperms, so with the yeasts alleged to have been found in cancers, their nature is disputed by many observers. The "fuchsin bodies" of Russell were regarded by Cazin and Duplay as a certain form of cell degeneration (*globes hyalines*); by Nepveu as being derived from changes in the nuclei of leucocytes or in red blood corpuscles; or still oftener from the endothelial cells of the lymphatics; and by others they were considered to be due to degeneration of protoplasm or to atypical mitosis and phagocytosis; whilst Foulerton and Price-Jones have pointed out three possible sources of fallacy as to the presence of yeasts in cultures obtained from malignant new growths, the chief of the three being contamination owing to the presence of yeasts or torulæ in the air of the laboratory.

In short, neither fission fungus, yeast fungus, nor psorosperm—neither bacterium, blastomycete, nor protozoon—has up to the present moment been satisfactorily shown, in spite of years of patient study by many skilled workers, to be in any sort of causal relationship to these diseases. How different was the case of the tubercle bacillus! When Koch announced his great discovery he was able to bring forward such overwhelming proof of the correctness of his claim that with few exceptions the most sceptical were forthwith convinced.

(*To be continued.*)

Royal College of Veterinary Surgeons.

FELLOWSHIP DEGREE.

A meeting of the Board of Examiners for this degree was held on the 12th inst. Seven candidates entered for the examination, and the following is a list of those who passed and duly received the diploma:—

Mr. J. S. Lloyd, Sheffield
Ernest Peacey, Stafford
G. Jones Roberts, Pwllheli
F. W. Emery, Belfast
E. C. Russell, Grantham
James Paton, Stevenage

The examiners were Prof. James Macqueen, Mr. John Malcolm, and Mr. Wm. Hunting.

ARTHUR W. HILL, *Sec.*

10 Red Lion Square, W.C.
December, 1903.

Veterinarians and Cancer Research.

The following paragraph occurs in an abstract of the report of the Cancer Research Fund in *The British Medical Journal* of December 12th, under the heading of "Experimental Work":—

"Already a considerable amount of experimental work has been done. Most valuable assistance has been given by the veterinary profession, which has shown the greatest willingness to co-operate. Many veterinary practitioners have presented horses, dogs, and other animals suffering from cancer. It has thus been established that cancer is extremely prevalent among domesticated animals, such as the dog, the cat, and the horse. Cows—especially in Ireland, where they appear to be kept to a comparatively venerable age—and pigs also suffer from the disease.

Registration of Stallions in Devon.

Devonshire Agricultural Association adopted on Friday a scheme for the Registration of sound stallions throughout the county, and it was stated to be the first organisation of the kind that has taken such a step. The Association will employ a Professor from the Royal Veterinary College, and will keep a Register of all stallions that fulfil the conditions required. The hon. secretaries of the local agricultural societies in Devonshire, seventeen in number, will collect the stallions in their respective districts at a place and ho r to be hereafter settled. The principal veterinary surgeon in each market town within the local show area will be nominated by the local agricultural association to examine all mares brought to him on market days during February and March. The veterinary surgeons are to be guided by the list of hereditary diseases issued by the Royal Veterinary College. It is estimated that the scheme will involve an expenditure of about £100 a year, and that this sum will be fully covered by fees and sales of printed registers, but in the event of any loss on the working of the plan, Mr. Scott-Browne, its originator, has pledged himself to obtain guarantors, or to give his personal guarantee on the financial side for a period of three years. The whole of the local agricultural societies favour the proposal, and one of them went the length of saying that the registration of stallions should be made compulsory by law. A similar registration is in force in the Holsworthy district of Devonshire, under the guidance of Mr. Scott-Browne, with results which are described as eminently satisfactory in the improvement of the breed of horses in the district. In deciding to take up and carry through the scheme the Devonshire Agricultural Association recorded its emphatic belief that though the motor-car is invading our roads and streets, many years must elapse before the great industry of agriculture can cease to be dependent upon the horse.

The Department of Agriculture (Ireland) and Veterinary Surgeons.

At a meeting of the Waterford Committee of Agriculture the Department of Agriculture wrote in reference to the resolution which had been proposed by Mr. Alex. Heskin, to say they had no money to expend on providing the services of veterinary surgeons.

Arising out of this statement the Chairman, the Rev. Paul Power moved—"That the reply of the Department is most unsatisfactory, and that we appeal to the County Councils of Waterford, Tipperary, and Kilkenny to press the Department to sanction the appointment of a resident veterinary inspector in the Carrick-on-Suir district on the following terms—Salary fixed at £75 to begin with, in addition to the following scale of fees—Farmers valued at or under £100 requiring his services a fee of 10s.; farmers at £50, and under £100, 5s. fees, and farmers valued £50, 2s. 6d., half the fixed salary to be paid by the Department, the other half by the Carrick-on-Suir union area, and Carrick Urban. Candidates for the office to have a certificate of competency from the Department Veterinary College or from Professor Mason, and that this appointment be made a precedent for future similar appointments, and that the duty of such inspector be to treat the various diseases in cattle at the homes of the farmers, in addition to the duties assigned to the present veterinary inspectors employed by the County Councils, and that Carrick-on-Suir be the centre of residence." Mr. Alex. Heskin seconded the resolution, which was passed unanimously.—*The Farmers' Gazette.*

THE MEMORIAL TO PROF. NOCARD.—The following additional names of contributors have been received:—Geo. Williams, M.R.C.V.S., Pimlico: E. H. Pratt, M.R.C.V.S., Northallerton: W. Penhale, F.R.C.V.S., Barnstaple.

Degrees for Veterinary Surgeons.

In the course of his speech at the Central Chambers of Agriculture dinner, Lord Onslow referred to several topics, including that of the better training of veterinary surgeons. He said:

"He was glad to be able to say that within the last few days the Board had succeeded in obtaining the report of a committee appointed by the University of London to inquire into the question of the recognition in a greater degree of the services which were rendered to the community by the veterinary profession. That committee had reported in favour of conferring upon members of the veterinary profession a degree in medicine and surgery with the word "veterinary" appended thereto. That degree would be of the same value and importance as the degree was in the faculty of medicine. (Hear, hear.) He hoped the result would be to attract to the veterinary profession a great many young men who at present thought that the profession was not sufficiently recognised in this country."

OBITUARY.

JOHN ROXBURGH BROWN, M.R.C.V.S., West Calder. 1859. Edin: Jan., 1880.

Mr. Brown died very suddenly on Saturday night, Dec. 12th. The deceased gentleman had gone to bed in his usual health and good spirits, and before morning he was dead, the proximate cause of death being failure of the heart's action. Mr. Brown's startlingly sudden death came as a shock of painful surprise to the inhabitants of the West Calder district, by all of whom he was very highly respected.—*N.B.A.*

CORRESPONDENCE.

ACCIDENT INSURANCE COMPANIES AND VETERINARY SURGEONS.

Sir,

Your correspondent Mr. F. Morton Wallis is not at all singular in his experience; even the most reputable offices are guilty of such rascally conduct. It nearly all depends upon the manager, some of them will take your premium with a smile and later on consider it a cute thing to evade payment of a liability by pleading some sophistry or other. It was my misfortune to come across such a man not long ago when insuring my workmen against accidents. Claims were paid under the policy when they were small mishaps, but when it came to a broken leg, Oh no, that was not in the bond, and I had to accept 3s. in the £ of my claim or go to arbitration.

It is therefore a pleasure to report an instance of a most satisfactory settlement just made by the office in which I am personally insured against accident, viz., the London, Edinburgh, and Glasgow Assurance Co. Ltd. I had met with a similar accident as Mr. Wallis, and was at once, without dispute, paid my full claim of two weeks total and 11 weeks partial disablement.—Yours faithfully,

P. PERKINS.

43, Havelock Road, Hastings.
December 15th, 1903.

COMMUNICATIONS, BOOKS AND PAPERS RECEIVED.—Messrs. John Gosling, W. M. Scott, F. Hobday, G. H. Locke, J. McKenny, P. Perkins. G.M.

American Veterinary Review, The Western Mail, The Yorkshire Post. Revue Générale de Médecine Vétérinaire.